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MacKay, Kelly J. PhD and Vogt, Christine A. PhD, "Information Technology and Vacation Planning, Behavior, and Satisfaction: A Longitudinal Panel Study" (2016). *Tourism Travel and Research Association: Advancing Tourism Research Globally*. 57.  
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# Information Technology and Vacation Planning, Behavior, and Satisfaction: A Longitudinal Panel Study

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## ABSTRACT

*With much of tourism and information technology (IT) research focused on pre-trip planning and information search, this study treats vacations as multi-phase experiences in order to examine how IT is influencing the way vacations are experienced before, during, and after the vacation travel event. The longitudinal panel methodology and vacation diaries employed in this study facilitated in situ data collection across time and situations. While very few panelists indicated they would not bring any IT on vacation, 40% of vacation diarists did not access the Internet while on vacation. Results suggest those who use the Internet and other forms of information technology on vacations are just as satisfied with their vacations as those who take IT with them but don't bother to use it. Findings show some differentiation among levels of technology adopters in terms of vacation IT behavior, specifically related to wireless technology.*

**Keywords:** *vacation, information technology, panel study, satisfaction*

## INTRODUCTION

As information technology (IT) equipment is increasingly mobile, multi-functional, and user-friendly, access to and use of the Internet is becoming ubiquitous. IT is now transforming our understandings of time and space, and life domains including home, work, and vacations, regardless of distance between them (Green, 2002). To date the majority of tourism research related to IT has focused on pre-trip planning and information search, with little examination of IT use and impact on vacation behavior and experiences (Fang & Lie, 2006; Frew, 2000; Wang & Fesenmaier, 2004). Recognizing that a vacation has long been conceptualized and treated as a multi-phase experience (van Raaj & Francken, 1984) comprised of spatial and temporal variations (i.e., anticipation and planning, travel to destination, on-site experience at destination(s), travel back to home, vacation recollection), the broad purpose of this research is to understand how IT is influencing the way vacations are experienced across all phases of the vacation travel event. Of specific interest is to study how pre-trip planning IT use aligns with during and post-trip vacation experiences. Following the multi-phase framework, the longitudinal panel methodology and vacation diaries employed in this study facilitate *in situ* data collection across time and situations (Stewart & Hull 1992; Vogt & Stewart, 1998; Zins, 2007). The dominance of cross-sectional designs in survey based tourism research is only recently being

challenged (c.f., Zins 2007). This study design captures the process nature of trip planning behavior and hence avoids bias based on travelers' post hoc recall and retrospectives. Past research has shown that people's interpretations of their experiences differ as time passes (Stewart & Hull, 1992). Additionally, in the vacation phase, a panel study provides the advantage of real-time data collection during the vacation, providing insights about IT and vacation experiences that might otherwise be lost (Vogt & Stewart, 2001).

## METHOD

The data presented here were drawn from vacation diaries of panelists who were sourced from lists of travel information requesters (N=1062) provided by three co-operating tourism agencies. The final panel list was delimited to Canadian residents (N=732) and consisted of 315 individuals who consented to be part of the study. Of these 315, 143 were travelling and agreed to complete one or more vacation diaries for a total of 279 vacation diaries (T) received over five vacation diary time points between winter of 2006 and summer 2007. Most diarists are married/living common law (82%), employed full-time (48%) or retired (30%), hold a post-secondary diploma (32%) or university degree (42%), and have an annual household income of \$60,000 (CAD) or above (71%). Slightly more than half of the panelists (53%) were women. Although panelists could use an online option to report their vacation activities, only four percent selected a web diary. Of the 45% of panelists who completed diaries, 53% completed two or more. Diaries contained three sections to capture the vacation phases: 1) pre-trip focused on travel motivations and trip planning; 2) during trip questions were daily reports regarding trip aspects such as information search, use of IT, and place of information/IT use; and 3) post-trip questions related to trip satisfaction, spending, and effect of IT on vacation satisfaction and return to daily life.

## RESULTS

### Before Vacation

For their vacation trips (T=279) approximately 71% of diarists used the Internet to book/purchase some aspect of their vacation, the most common of which was accommodations (67%) and the least common was equipment (e.g., specialty items, clothes, guidebooks) used for trips (6%). Flights (44%), and other transportation (25%), attractions (19%), events (18%), and activities at the destination (14%) were also booked online. "Other" bookings (17%) included restaurant reservations, conference activities, and weather forecasts. The top three types of IT equipment that diarists indicated they would be taking or have access to while on vacation were: digital camera (71%), cell phone (48%; 18% with Internet), and laptop with wireless (20%). Only 8% of diarists indicated they would bring no IT on their trip. Internet booking and IT equipment were examined based on diarists' high, medium, or low IT adopter categorizations using measures of equipment ownership by frequency of Internet use (e.g., low = no wireless communication devices and no desktop computer by use Internet less than once per day; high = wireless devices by continuous Internet use) (Kah, Vogt, & MacKay, 2008; Selwyn et al., 2005) from both early in the study (Diaries 1 and 2 in 2006) and later (Diaries 3, 4, and 5 late 2006 and 2007). Results of Chi-square tests suggested no significant relationships among technology adopter categories and whether the Internet was used in booking aspects of their trips reported in Diary 1. The same was true for Diary 2 trips with the exception of flight booking/purchase, where Internet usage was more likely for those in the high tech group ( $X^2 = 7.968$ ,  $df = 2$ ,

$p < .05$ ). IT equipment brought on trips reported in Diary 1 differed by technology adopter group only for laptop with wireless ( $X^2 = 8.161$ ,  $df = 2$ ,  $p < .05$ ), with the high tech group more likely to bring this equipment on vacation. For Diary 2 no significant relationships were found.

For the latter part of the study timeframe, Internet use for trip booking showed a significant relationship to technology adopter categories for Diary 3 vacations only. The results showed higher than would be expected use by the medium tech group ( $X^2 = 7.450$ ,  $df = 2$ ,  $p < .05$ ), with 94% of those in the middle group using the Internet to book some aspect of their vacation, almost twice as likely to do so than the low or high groups. No significant relationships were found for trips reported in Diaries 4 or 5. IT equipment brought on vacation in the later time frames was found to not be related to adopter groups for Diary 3 trips. For Diary 4 vacations, those who brought cell phones (without camera or Internet access) were more likely to be in the low and medium tech groups ( $X^2 = 6.288$ ,  $df = 2$ ,  $p < .05$ ) with 67% and 42% respectively, bringing this type of phone. The medium and low tech groups were also more likely to have desktops available to them on their vacation ( $X^2 = 7.576$ ,  $df = 2$ ,  $p < .05$ ). Only 4% of the high tech group reported desktop access; whereas, 21% of medium and 50% of low tech did so. For the most recent set of vacation diaries, summer of 2007 (Diary 5), there were no significant relationships for bringing equipment on trips by technology adoption group. Only wireless laptops approached significance at ( $X^2 = 4.897$ ,  $df = 2$ ,  $p < .10$ ) with high tech groups more likely to bring them on vacation.

### **During Vacation**

Based on what IT equipment diarists brought on vacation, the incidence of use was lower than 100% in all cases. For example, 76 percent and 74 percent of diarists respectively who brought their digital cameras and cell phones used them. While the number of diarists who brought wireless laptops, iPod/MP3 players and GPS was not the highest, they had the highest incidence of use (96%, 94%, and 92%, respectively). In the case of desktop computers and PDAs, incidence of use exceeded their reported availability, possibly due to diarists not being aware of IT at accommodations or at friends /family's homes, which were cited as the top two most popular Internet access locations; suggesting vacationers who may not have planned to use the Internet did so because it happened to be available to them. It is notable that 40% of diarists did not access the Internet at all during their vacation. Of those who accessed the Internet while on vacation ( $n = 151$ ), 42% used the Internet one-quarter or less of their vacation time, 34% went online between 26% and 50% of their vacation days, 15% connected between 51 and 75% of their vacation duration, and almost 9% accessed the Internet for 75% or more of their vacation days. Spending on Internet access ranged from \$0 to \$150 for the trip ( $M = \$8.5$ ). Given the primary locations of access (e.g., hotels, private homes) the low spending is expected as many hotel rates include "free" Internet access. What cannot be gleaned from these results is whether vacationers selected their accommodations purposely to include Internet access. No significant relationships were found for Internet use during vacation and whether or not panelists had been to the destination before ( $X^2 = 0.45$ ,  $df = 1$ ,  $p = .832$ ) or the destination location (i.e., domestic, USA, other international, or mixed) ( $X^2 = 4.246$ ,  $df = 3$ ,  $p = .236$ ). There were significant relationships, however between Internet use on vacation and visiting friends/family ( $X^2 = 11.121$ ,  $df = 1$ ,  $p < .001$ ) or including business/meeting as part of the vacation ( $X^2 = 4.583$ ,  $df = 1$ ,  $p < .05$ ). Vacationers who visited friends and family or included business were more likely to use the Internet than those who did not.

## After Vacation

Upon returning home, diarists reported high satisfaction with all trips (M=5.9 to 6.3 on 7-pt. scale) with no significant differences in overall satisfaction based on whether or not they used the Internet while on vacation. Furthermore, use of Internet also had no significant effect on “the way plans worked out”, “the way they felt physically” or “... emotionally”, “the pace of vacation they experienced”, “the amount of fun they had”, or “their return to daily life.” Those who used the Internet while on vacation expressed that use of the Internet for information ( $t(265) = -8.942$ ,  $p < .001$ ) and other forms of technology they used ( $t(265) = -4.181$ ,  $p < .001$ ) enhanced their vacation experience.

## CONCLUSION

Unique to the research presented here is the *in situ* focus on vacationers’ use of IT across all vacation phases. Moreover the longitudinal panel design enabled investigation of changes across time and that cannot easily be achieved through cross-sectional research (Anderson and Tracey, 2001; Zins, 2007). This particular tourist panel took place during a period of rapid diffusion of IT products and wireless Internet communication technology. Our findings show some differentiation among levels of technology adopters in terms of vacation IT behavior, specifically the propensity of high IT adopters to bring and use wireless portable devices like laptops on vacation, and the higher rates of Internet bookings by medium tech groups later in the study time frame. Pure leisure vacationers (vs. VFR and vacation-business combination) were less likely to use the Internet on vacation; however, our findings suggest those who use the Internet and other forms of information technology on vacations are just as satisfied with their vacations as those who take IT with them but don’t bother to use it. The methodological approach used in this work enabled this research to extend in important ways the current growing body of literature on web-based travel information search and purchase (*cf.* Special issue of *Information Technology and Tourism* vol. 9, 2007) and consider the influences of IT on actual vacation behavior and satisfaction.

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